

# **EXHIBIT 4**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

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IN RE NATIONAL PRESCRIPTION MDL No. 2804  
OPIATE LITIGATION Case No.  
17-md-2804

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This Document Relates to:  
SALMONS v. PURDUE PHARMA LP, et al  
MDL Case No. 1:18-op-45268

FLANAGAN v. PURDUE PHARMA LP, et al  
MDL Case No. 1:18-op-45405  
DOYLE v. PURDUE PHARMA, LP, et al  
MDL Case No. 1:18-op-46327

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Zoom Deposition of Lewis P. Rubin, M.D.  
Washington, D.C.  
September 10, 2020  
10:05 a.m.

Reported by: Bonnie L. Russo  
Job No. 4242152

1 question, but I'm sorry, I felt it was a bit  
2 vague, and I needed to qualify. There are  
3 prescriptions and there are prescriptions.

4 BY MR. BILEK:

5 Q. I understand. My point is, is that  
6 the prescription would be -- when a woman is  
7 taking a prescribed opioid and she has a child  
8 that is born with NAS, that prescription would  
9 be a cause of the NAS in the child.

10 MR. EHSAN: Object to the form.

11 THE WITNESS: Yes. With the  
12 qualifier that the two main reasons for  
13 prescribing opiates to women in the latter part  
14 of pregnancy are either they have some medical  
15 condition that has required or like now  
16 requires opioids, or they have been essentially  
17 hooked to opioids on, you know, illicitly and  
18 are coming into a treatment program.

19 In both cases, yes, the proximate  
20 cause of the NAS, perhaps you could say is the  
21 fact that the prescription was written, but the  
22 real cause is that this was required because of

1 earlier events often preceding the pregnancy.

2 BY MR. BILEK:

3 Q. Now, going back to Dr. Anand, you  
4 have relied on his expertise in the past,  
5 correct?

6 MR. EHSAN: Object to the form.

7 THE WITNESS: I certainly admire his  
8 expertise and find it useful in specific areas.

9 BY MR. BILEK:

10 Q. And what are those areas?

11 A. Those areas have been the importance  
12 of providing analgesia, meaning pain control,  
13 to avoid physical and other stresses during  
14 human development after birth.

15 Q. And you -- have you ever cited to  
16 his published work?

17 A. I'm sorry. Zoom. Could you repeat  
18 the question.

19 Q. In any of your articles, have you  
20 ever cited to Dr. Anand?

21 A. I don't recall.

22 Q. But it's certainly possible,

1 but I realize that --

2 BY MR. BILEK:

3 Q. So --

4 A. No. You've got to let me finish.

5 But I realize that, as I have said enumerable  
6 times, we have so much evidence that shows what  
7 is and isn't a cause of a later problem.

8 Q. Now, you -- have you ever diagnosed  
9 a NAS child and listed a possible cause of the  
10 NAS diagnosis as opioid?

11 A. Yes.

12 Q. When have you done that?

13 A. Frequently.

14 Q. Okay. And what -- how do you make  
15 that diagnosis?

16 A. So there are definitions of all  
17 diagnoses. A definition that is very commonly  
18 accepted currently in medicine is the  
19 definition that appears in what are called the  
20 ICD currently 10 codes, the criteria for making  
21 a diagnosis. And because I practice according  
22 to the standards of my profession, I adhere to

1       those definitions.

2                   I have lost track of the specific  
3       question. I'm sorry.

4           Q.       I said: How do you make a diagnosis  
5       of NAS resulting -- that is caused in part by  
6       opioids?

7                   MR. EHSAN: Object to the form.

8                   THE WITNESS: So that's actually  
9       straightforward. Thank you for a  
10      straightforward question.

11                  I make the diagnosis in that  
12      instance by having a baby who exhibits sign  
13      symptoms consistent with the profile, the  
14      behavioral repertoire of neonatal abstinence  
15      syndrome, and I draw the link to the  
16      possibility that maternal opioids are involved  
17      by having one or both of the following: A  
18      documented or suggestive maternal history. The  
19      second is a toxicology screening either on the  
20      mother or the newborn or both.

21                  BY MR. BILEK:

22           Q.       And on the maternal history, is one

1       attributable reason from the fact that there is  
2       documentation of the baby when a fetus being  
3       exposed to opioids or other drugs that can  
4       induce this clinical spectrum.

5               BY MR. BILEK:

6           Q.       And when opioids are prescribed, my  
7       point is, that could be one of the causes of  
8       the NAS?

9               MR. EHSAN:   Object to the form.

10           THE WITNESS:   Certainly.   NAS is  
11       neonatal abstinence.   The abstinence has to  
12       come from being abstinence of something.

13           BY MR. BILEK:

14           Q.       Right.   Now in your diagnosing, do  
15       you use the Finnegan test?

16           MR. EHSAN:   Object to the form.

17           THE WITNESS:   I do, because it is by  
18       far the most common screening form that is  
19       utilized and has been utilized for several  
20       decades in the United States.

21           BY MR. BILEK:

22           Q.       And it is widely used throughout by

1 THE WITNESS: Yes. That should seem  
2 obvious.

3 BY MR. BILEK:

4 Q. Okay. Let's turn to the second  
5 page, first full paragraph underneath the box.  
6 It says -- well, actually, the last paragraph  
7 -- let's see here.

8 Actually, why don't I just have you  
9 read what you -- what you wrote, the last  
10 sentence of the first paragraph.

11 A. "Reports of long-term adverse  
12 behavioral effects in children of  
13 narcotic-addicted mothers and in animal studies  
14 are disturbing."

15 Q. Is that -- do you take that as a  
16 true statement?

17 MR. EHSAN: Object to the form.

18 THE WITNESS: In September of 1998,  
19 when this paper was published, that is a  
20 reasonable statement. In -- what month are we  
21 in? In September of the year 2020, that  
22 statement would need to be amended.



1 MR. EHSAN: I object to the form.

2 Doctor, if you can give me one  
3 second because of this lag, I have to wait to  
4 make sure he is done before I can object, so  
5 just give me one second. Thank you.

6 BY MR. BILEK:

7 Q. So does this study cause you any --  
8 does it disturb you in any way that there may  
9 be long-term additional problems for NAS  
10 children versus children that are in the same  
11 economic circumstance?

12 MR. EHSAN: Object to the form.

13 THE WITNESS: Does it disturb me?  
14 I'm not sure how to answer that.

15 BY MR. BILEK:

16 Q. Yes.

17 A. But I will answer you about whether  
18 I am disturbed by the quality of the  
19 conclusions, and I am not, because to be a bit  
20 more granular and accurate, let me just point  
21 out several things that are said that are  
22 alighted by, you know, the conclusion that you

1 MR. EHSAN: Objection.

2 BY MR. BILEK:

3 Q. And it's fair to say that you didn't  
4 consider this opinion in drafting your report.

5 A. Incorrect.

6 MR. EHSAN: Object to the form.

7 BY MR. BILEK:

8 Q. Well, you have no evidence that you  
9 did.

10 A. You have no evidence that I didn't.  
11 What I said is that I have -- you have got to  
12 let me finish a brief -- you cut me off when I  
13 try and answer you.

14 I am not being argumentative. I am  
15 trying to finish a sentence. I realize that  
16 Zoom makes everything much more difficult.

17 What I said is that, you can't, you  
18 know, rule out that I didn't, simply because,  
19 like I said, I have looked at an enormous  
20 number of papers. I frankly offhand do not  
21 recall one way or the other whether this is one  
22 of them. Period. That's all.

1 MR. EHSAN: How about we take a  
2 five-minute break whenever you are ready.

3 MR. BILEK: Okay. Fine by me.

4 MR. EHSAN: All right.

5 (A short recess was taken.)

6 MR. BILEK: Court Reporter, could  
7 you hand Exhibit 19 to the witness, please.

8 (Deposition Exhibit 19 was marked  
9 for identification.)

10 BY MR. BILEK:

11 Q. Can you identify this exhibit for  
12 the record.

13 A. A publication in the journal, JAMA,  
14 J-A-M-A, Network Open from 2019 entitled:  
15 "Cognitive and Motor Outcomes of Children With  
16 Prenatal Opioid Exposure, a Systematic Review  
17 and Meta-Analysis."

18 Q. What is a meta-analysis?

19 A. So a meta-analysis is a technique by  
20 which individual studies, in this case,  
21 individual clinical trials usually are  
22 aggregated. It's not a straightforward

1           A.       Yes. It is an article published in  
2       Frontiers in Pediatrics in June of 2020. It is  
3       entitled: "Perinatal opioid exposure primes  
4       the peripheral immune system towards  
5       hyperreactivity."

6                    I am listed as -- I am listed as the  
7       editor. I did not review it. The reviewers  
8       are listed, but I certainly looked at the  
9       article, looked at the reviews, and I was the  
10      editor.

11          Q.       And you approved the article for  
12      publication.

13          A.       Yeah. That's the meaning of what I  
14      just said.

15                   MR. EHSAN: Object to the form.

16                   BY MR. BILEK:

17          Q.       Did you submit the article for  
18      publication as editor?

19                   MR. EHSAN: Object to the form.

20                   THE WITNESS: No. I approved the  
21      article for publication.

22                   BY MR. BILEK:

1       alarming rates."

2                   Do you agree with that?

3           A.       Yes.

4                   MR. EHSAN: Object to the form.

5                   BY MR. BILEK:

6           Q.       What?

7           A.       Yes.

8           Q.       You do? Okay.

9                   Let's go to the second paragraph, go  
10       to the middle. It says: "Recent studies  
11       showing an association between opioid use  
12       during pregnancy and poor health outcomes for  
13       both pregnant women and infants highlight  
14       prenatal opioid exposure as a serious public  
15       health concern."

16                   Do you see that?

17           A.       I see everything that you are asking  
18       me to look at, yes.

19           Q.       Do you agree with that statement?

20           A.       Sure.

21           Q.       "Opioid exposed infants represent  
22       extremely vulnerable patient population with 50

1 to 80 percent experienced neonatal abstinence  
2 syndrome."

3 Do you see that?

4 A. Yes.

5 Q. Do you agree with that statement  
6 that you edited?

7 A. Well, yes. In the same sense that  
8 in terms of quantifying this, these are  
9 ballparks. A previous article that you asked  
10 me about a statement that I agree or disagree,  
11 quoted 75 to 90 percent. Now it's 50 to  
12 80 percent. Certainly it's the majority.  
13 Difference in different populations.

14 Q. "The prenatal opioid exposures  
15 associated with an increased risk of fetal  
16 growth restriction, preterm birth, and lifelong  
17 motor and cognitive deficits."

18 Do you see that?

19 A. I do.

20 Q. Do you now agree with that  
21 statement?

22 A. I don't agree with all of the

1       and make some of that language a little bit  
2       more precise in the ways that I have elaborated  
3       here today.

4               I had for myself two options. One  
5       is I could say, gee, although I know a lot  
6       about this topic, maybe I shouldn't review this  
7       even though it's on rats, not humans. The  
8       other is that I would look critically at the  
9       methods and the conclusions, specifically the  
10      methods and that I would leave it to the  
11      reviewers to make comments as long as they  
12      generally agreed with them about specific  
13      wording.

14             So what I am trying to say is that,  
15      yes, I'm the editor. Yes, my name is on here  
16      and yes, I agree with this paper. But had I  
17      been one of the reviewers, I might have  
18      suggested a bit more qualification granularity.  
19      I hope that clarifies my stance about this  
20      paper.

21            Q.       But you didn't, sir, did you?

22            A.       I didn't what?

1 BY MR. BILEK:

2 Q. Let's go to the last sentence in  
3 that same paragraph. Would you read that.

4 A. Which paragraph were we on again?

5 Q. We are on -- in the introduction, we  
6 are on the second paragraph and start with:  
7 "The devastating."

8 A. "The devastating consequences of  
9 opioid exposure are the physical health and  
10 developmental outcomes of exposed children  
11 strengthen the need to advance scientific  
12 understanding of the underpinnings of  
13 opioid-induced neural injury and to advance  
14 biomarker development of this patient  
15 population."

16 Q. That's contrary to your written  
17 report in this case, isn't it?

18 MR. EHSAN: Object to the form.

19 THE WITNESS: I don't know if it's  
20 contrary. It's certainly divergent, and as I  
21 read through this paper, I perhaps -- and here  
22 is my speculation about my own motives: In



1       contrary to your position that you took in this  
2       case in which you wrote a slanted report?

3               MR. EHSAN: Object to the form.

4               THE WITNESS: Yeah. If I could, I  
5       would object to your saying that it's a slanted  
6       report. I did not write a slanted report, and  
7       I do not understand your question aside from  
8       the attempt to impute my integrity.

9               BY MR. BILEK:

10       Q. Well, let's put it this way,  
11       something we can agree on.

12       Many long-term studies that were  
13       contrary to your position were omitted from the  
14       report.

15               MR. EHSAN: Object to the form.

16               THE WITNESS: My report cites a  
17       small number of papers which in each case were  
18       meant to be illustrative of a given point. I  
19       will say for the nth time, my references are  
20       anything but comprehensive or all inclusive.  
21       No conclusion should be drawn further than  
22       that.

1 response to perinatal opioid exposure  
2 characterized by immune cell reprogramming and  
3 priming."

4 Q. Continue reading.

5 A. "This evidence may, in part,  
6 contribute to the neurological injury following  
7 developmental opioid exposure characterized in  
8 our previous preclinical study. The current  
9 study and the treating investigations that link  
10 developmental and neurological injuries  
11 including cerebral palsy and Down syndrome with  
12 underlying systemic inflammation resulting from  
13 abnormal PBMC activity."

14 Q. Do you agree with that?

15 A. Agree with which aspects of it?

16 Q. The conclusion of the study you  
17 edited.

18 A. Okay. The entirety of what I just  
19 read? Yeah. I agree with their results. I am  
20 interested in their connection of the  
21 implications of the results to other separate  
22 issues of neurodevelopment as they mention,

1 BY MR. BILEK:

2 Q. Is this something that you have seen  
3 before?

4 A. No.

5 Q. Were you involved at all with the  
6 March of Dimes and their -- in connection with  
7 NAS?

8 A. Yes, obviously.

9 Q. What did you do for the March of  
10 Dimes in connection with NAS?

11 A. So as I -- you know, my involvement  
12 with the March of Dimes goes back to the 1980s  
13 and during that time, I was a participant,  
14 fund-raiser, spokesperson, scientific and  
15 clinical advisor and board member at different  
16 times and in different places.

17 From many of those roles, I was  
18 involved with their initiatives which as you  
19 say are trying to improve the care and outcomes  
20 of newborns and infants. The March of Dimes, I  
21 should add, started under FDR's administration  
22 and it were the dimes that were placed in order

1 right above the box: "As they grow older."

2 A. "As they grow older." Okay. "As  
3 they grow older, children who had NAS may have  
4 problems with speech, language and learning."

5 Q. Continue.

6 A. "They may need early intervention  
7 services to help them learn to walk, talk and  
8 interact with others."

9 Q. Do you agree with this statement by  
10 the March of Dimes?

11 MR. EHSAN: Object to the form.

12 THE WITNESS: Well, I never did and  
13 certainly now, I don't speak for the March of  
14 Dimes. I would say that strictly speaking, I  
15 agree with the following sentence: "As they  
16 grow older, children who had NAS may have  
17 problems with speech, language and learning."  
18 I agree with that and I have given you my --  
19 again, critical reading of the literature,  
20 which is that, yes, NAS is a marker, and there  
21 are many ways of getting to NAS.

22 NAS may mean -- may be a consequence